

The University of Chicago

**THE CONCEPT OF TENSION IN
PHILOSOPHY**

**A PART OF A DISSERTATION SUBMITTED
TO THE FACULTY OF THE DIVISION OF
THE HUMANITIES IN CANDIDACY FOR
THE DEGREE OF DOCTOR OF PHILOSOPHY**

DEPARTMENT OF PHILOSOPHY

1933

By

ALBERT MILLARD DUNHAM

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Chapter I

Process and Futurity

The reality of empirical time depends ultimately upon the reality of the future. For contrasted with the comparatively abstract time of physics with its relations of before and after, empirical time has the three distinct modes of pastness, presence, and futurity, and it is upon the last one that the chief differences between physical time and empirical time depend. It is the future which involves those aspects of novelty, indetermination, or in general, of incompleteness, without which genuine process is inconceivable. Nothing of the kind is implied in bare relations of sequence, of before and after, though the attempts to reduce experienced time either to an expression of the principle of sufficient reason, or to a mere succession of discrete presents or states, assumed implicitly that the qualities of experienced time could be exhausted by the description of sequence. That this assumption was fallacious is shown in the failure of its authors to account for time as it is actually experienced. Those temporal characteristics which seem inseparable from the reality of futures were simply left out of account. The result was a world of experience in which novelty, indetermination, potentiality, were omitted from nature, either to be explicitly denied, or to be dismissed as peculiarities attributable to super-natural centers of experience. It is not surprising, therefore, that modern naturalism, inspired by the reaffirmation of the temporal categories in biology and in physics, should have sought to eliminate inadequacies in the philosophical theory of time by putting back into nature what the deterministic tradition had left out. The power of such strategy is threefold: it renders more concrete and empirically descriptive the categories of natural science; it rejects the denial which had been made of the futuristic element in experience; it eliminates one of the chief grounds for the assumption of super-natural centers of experience by naturalizing facts for whose explanation supernaturalism had been devised. Such has been the import of the theory of time as explicated by naturalists like Dewey, Alexander, and Whitehead.¹ And for every one of these thinkers the reality of time has been bound up with that of the future. The emphasis

1. See especially A. N. Whitehead's Process and Reality. (New York: MacMillan, 1929.)

has been upon novelty, emergence, and indetermination, in accord with the thesis that mere sequence and mere repetition are insufficient to account for real empirical time. The world of determinism, on the contrary, is only pseudo-temporal; presumable, if one were sufficiently acquainted with the determinate structure of his world he might deduce from it the character of whatever is going to happen. But in that case novelty and incompleteness would be mere appearances, traceable to the finitude of human knowledge: Futurity would be an illusion of the human perspective.

But, now, is it possible to approach the problem of futurity directly, without more than a bare presupposition of naturalism as a background for analysis, and without cosmological pretensions? That is, can the problem of futurity be approached phenomenologically? It may be that contrary to the supposition that process is an illusion, time, through its definitive modality, the future, is not only possible and describable, but is somehow necessary for experience. Such indeed does seem to be the case, as our subsequent analyses will show. And although the necessity of futures for experience, as indicated in the phenomenology of tension, entails as its implication the fact and possibility of process, both of the latter can be approached directly. If we were primarily interested in the possibility of futurity, our problem would be that of individuation. For the possibility of there being any future at all depends upon the possibility of difference, and of differentiation. Of the theories that have been advanced to explain individuation, the organismic theory of Whitehead comes nearest to comprehension and adequacy. The older theories were based on the 'all or none' principle and involved the complete exclusion of anything that was not included in the becoming of a concrete occasion. However difficult it may be in detail, Whitehead's theory offers the possibility of degrees of exclusion, and of perspective differentiation. Instead of the complete exclusion of the fact that is incompatible with a given act of experience, or the extensive partitioning of the incompatible fact which would after all deprive it of its definitive being, there is the possibility of intensive quantification, such that the fact is felt faintly or vividly, according to its relevance. Relevance in its turn depends upon organismic 'appetition', since it is relevance to appetition.¹ This same notion of appetition, when it is 'purified' of its anthropomorphic and evaluational meanings, when it is 'de-romanticized', becomes the more precise and general concept of tension. It is through tension that futurity becomes essential to experience.

1. Process and Reality, p. 380.

Although individuation, and the possibility of futures, need not be given detailed consideration in a phenomenology of time, there is need for some evidence that futures are actual, i.e., that they appear in experience. For even though it may be supposed that the necessity of futures in experience, as revealed in the phenomena of tension, entails the actuality of those same futures, it is important that their actuality be shown as amenable to description. This description should precede the derivation of tension and of the essential futurity of experience from Whitehead's 'appetition.' It too, however, can best be made in accord with Whitehead's phenomenology.

1.

Since the 'actual occasion' is conceived by Whitehead as the limiting case of an organism in its environment, one can interpret it without injustice as an animal center of experience. Within the occasion there is an indetermination of direction and of form corresponding to its incomplete conformity to its past. The 'final cause' in this sense is not a thoroughly definite and concrete envisagement of what it will be, but rather a general direction in which it is going, defining a range of possibilities which are only vaguely given. There is within this range the class of determinate characteristics which the organism will have, i.e., the qualities which it will experience. But the organism, so long as it is alive, is essentially incomplete, and it feels this incompleteness as its future. Vagueness, generality, indetermination, potentiality, and novelty are functions of the unrest which underlies the organism's 'appetition' or creative urge. The unrest and creativity themselves, however, are to be considered in their turn as constituting the energy, the power, of the organism. They are, in short, the future as effective--not merely as experienced--in the present. These will be discussed in connection with the future as necessary for experience. The difference between such a role and the role played by the future as experienced is an important one. As necessary for experience futurity is the potentiality of the organism for acting and being acted upon. As experienced, futurity is that same potentiality as mediating the possibilities of future occasions. It is with this mediation that we are at present concerned.

The future is vague because its content does not have the definiteness of concrete detail which is found in the present. If we think of an event that is expected to take place tomorrow, such as the making of a journey, we cannot, try as we will, remove the

character of indefiniteness which clings to our plans and expectations. The train may leave at five minutes after the hour, or at one minute before. Such details as the color and form of the coaches, the arrangement of the seats, and the conduct of the conductor and the passengers, fall upon whole ranges of possible colors, arrangements, and behavior. And there is no reason to believe that less conscious or cognitive experiences of the future are more definite than these. Rather we should expect them to be less so, as in the case of vague premonitions of the general drift of affairs, or blind struggles of suppressed impulse to realize itself, and catch in the present the cast of what its future will be. It is true that a similar vagueness characterizes the experience of the past. Memory as well as anticipation has this indefinite quality about it. But the difference, which is a great one, is that the future is experienced as direction toward, while the past is unalterably direction from. The quality of being the direction toward which the organism is tending will become more evident in a consideration of the future as potential. To that end it will be helpful if we first make clear the nature of generality insofar as it is ingredient in the future.

Behavioristic psychology is suggestive at this point, for a basic account of the way in which organisms experience generality.¹ Given the 'sign situation' in which there is a stimulus and the interpretative response to it, the stimulating situation can be designated not merely as a single stimulus, but as a stimulus range. The organism can react to any one of the class of stimuli which lies within the stimulating range, as evidenced in Pavlov's work on the behavior of apes, in which the response to metronomic beats as substitute stimuli for food-reactions was correlated with a range of oscillatory rates rather than with one particular beat. In such instances the response is a general one, being a response not to a particular stimulus as such but to the stimulus by way of the characteristics it shares with the other components in its range. The generality in this sense, is a function of the situation as a whole; it is a property of the stimulating situation as well as of the response, since an important aspect of the stimulus is the group of common or partially identical properties which characterize the specific metronomic rates. The possibility of such conditioning shows how, genetically, generality of the sort found in futures can arise. Also it correlates per-

¹. The behavioristic account of generality is derived from the late Prof. G. H. Mead's theory of meaning, and occurs in unpublished manuscripts which will form part of a forthcoming volume edited by Prof. Chas. Morris.

fectly with the phenomenological character of vagueness and indefiniteness which is found in the experience of futurity.¹ The vagueness is the indefiniteness of the response to any particular stimulus in all of its detail, as instance the general response to the journey we are to make; there we do not respond to the specific details of the event which is this train at this moment and place. In the latter instance, the train would be present, and its event would be particular. Generality, however, does not serve by itself to distinguish the future any more than does vagueness. For through the mechanisms of language and the sign it is possible to stop the reaction before it goes on toward particularity. At that point there is vagueness, though not experienced futurity; this is the stage at which general characters are experienced simply as present, on their own account.

With the acknowledgment of potentiality and the direction toward, we come nearer to a differentiation of the future. To consider potentiality first, it is obvious that in some sense the particular event is there in the range. The occasion of the stimulus is one of a series of possibilities, which taken together constitute the general potentiality of the situation. To the extent that the situation tends toward the emergence of definiteness, of particular stimulus-qualities, and particular response-qualities, the potentiality of the situation has a direction toward, or becomes definitely futuristic. The language of emergence is an alternative language here to Whitehead's terminology with its 'ingression of eternal objects in the occasion'; behavioristically this 'ingression' becomes the emergence of 'stimulus-response qualities.' I do not see that for our purposes the difference is fundamentally important. In either case, the definiteness of the event is possible, and its mode of being potential in addition to its bare possibility if there is also a tendency toward its actualization. This is to say that the response is variable, but comparatively selective. From the standpoint of the present actual occasion the potentiality of the future is incompleteness. The past is completed, the future is completing, but the experience of the future, of present potentiality, means that the occasion is incomplete. However vague and indefinite the past may be, as past it does not have this characterization of incompleteness about it. Its vagueness is due to the confusion of what might have been with what was, where 'might have

1. For a discussion of indetermination and vagueness in the phenomenology of universals see Prof. C. S. Hartshorne's "Four Principles of Method--with Applications," Monist, vol. 43, Jan. 1933, p. 46.

been' is past possibility. This, however, is to be distinguished from the potentiality of what may be in the future.¹

Along with its vagueness, generality, and potentiality, the future is laden with coming novelty. To say that things will be is to say that they will never be quite the same. The future occasion will have its own novel contribution for the present in which it will occur, and it is this pregnancy with the novel which finally distinguishes the future from both the present and the past. In a sense this aspect is a part of the meaning of potentiality: potentiality is potentiality for actuality, with its novel qualities or new definiteness. What will be novel in the future is that which emerges as a selection from the possibilities that its present indetermination entails. These are not clearly given in the present, if it can be said that they are individually given at all. The most that is given is the direction toward, which broadens in its indetermination in proportion as the future becomes more distant. Consequently the more distant future is fraught with more incipient novelty than the nearer one. It is the novelty involved in it which also distinguishes the vagueness and generality of the future from mere abstractness. As Whitehead puts it, there is an urge toward maximum originality in each occasion, which can be best 'satisfied' by generality. But with the notion of an 'urge' we approach considerations of futurity as necessary for experience, rather than as experienced. And this will turn out to be, from our point of view, the most important problem involved in the establishment of the reality of the future.

2.

Two important conceptions which find synthesis in Whitehead's philosophy of organism are the notions of 'organic whole' and 'creative urge' or 'appetition.' The 'actual occasion' is an eventual organism which can best be conceived as a dynamic system, so constituted that any function of the part or component is a function of the whole, and the significance of the part or component is to be found in its contribution to the whole in which it occurs. This much of the theory of organism can be seen as a derivation from the logic of idealism, with its insistence on the principle of organic unity. But the teleological turn which Whitehead gives to the notion has not always been properly emphasized.

¹. Those who are familiar with Prof. Whitehead's Process and Reality will recognize its influence here and elsewhere in this summary, and merely suggestive account of the experience of the future.

As against the teleology which is a counterpart of determinism, based analogously to efficient cause on the principle of sufficient reason, the teleology of organism is a functional one, in that the end of the parts is their contribution to the whole organism. The whole is end, but in order for it to persist as end it must also serve as means for the parts, which therefore have some status as ends in themselves. The becoming of the organism, however, demands a principle of its own, and this principle is furnished in the conception of creative urge. The creativity of the whole world as one cosmic organism is what Whitehead calls the 'category of the ultimate,' a notion which echoes the mystical foundation of modern voluntarism.¹ But each organism or occasion has its own creative urge, and it is with this that the notion of dynamic unity fuses. The appetition or urgency of the organism is an expression of its total dynamic state. It is a function both of the exclusions, or 'otherness' which expresses the contrast of the given organism with those which constitute its environment, and of the indetermination of tendency which gives immediate character to the organism's potentiality for further completion. Appetition, therefore, is the dynamic factor in the unification or concrescence of the occasion. In this sense it is 'vector,' or has direction as well as integrity.

But it is the direction given in appetition which determines what the organism is, and what its experience is, at present. Not that the organism and its experience are undetermined by conformity to the past: the overwhelming influence of inheritance from the past is scarcely open to question. But that conformity is not complete, and hence an important role is left for determination by the future. Since, now, what is excluded from the past depends on what the future direction is experienced to be, even the past is determined in part by the future. As for the influence of the future upon the present, the very receptivity of the organism upon which its experience depends is determined, in part, at least, by its capacity or potentiality. Yet, since its potentiality is simply the presence of its future, and the expression of its appetition, the dependence of its experience upon its future becomes evident.

Valuable as it is in the theory of organism, however, the

¹. See Frank Thilly, History of Philosophy, p. 249 (New York: Henry Holt and Company, 1927), for a discussion of the importance of Jacob Boehme as a founder of voluntarism. Boehme's "matrix" from which even God arose was a blind and undifferentiated will or urgency.

concept of appetite is scarcely general enough in its connotations to serve the purpose for which it is intended. Whitehead has, for metaphysical reasons, tended to identify energy with feeling, impetus with impulse. His concept of appetite involves the reference of futurity to the 'mental pole' of the organism, where it receives evaluation 'up' or 'down' in a way that suggests the pleasure-pain reactions that accompany animal interest. The result is a restrictive importation into the theory of time and futurity of factors which do not seem essential in a generalized account.

In place of the comparatively anthropomorphic and evaluative notion of 'appetite,' it seems better to describe the dynamic state of the organism in terms of the more precise concept of tension. An organism, we shall say, is characterized by a state of tension which is representative of its direction toward equilibrium. (Whitehead's term for 'equilibrium' is the more colorful one, 'satisfaction.') Equilibrium corresponds to the temporal phase of 'completion,' and disequilibrium to the futuristic moment of 'incompletion.' The danger involved in the use of a non-imaginative conception like tension is just the opposite one to that involved in such concepts as appetite. In the former case the danger is that the notion, in its departure from the concrete suggestiveness of more romantic language, will lose descriptive adequacy by becoming too abstract. The task becomes one of the 'pursuit of meaning.' But the difficulty with such a notion as appetite is that it will bind attention to aspects of the situation which are not of general significance, and tend to become a poetic symbol for particularities of interest. For the moment at least, and for the problem with which we are concerned, the former has seemed the lesser of two evils.

Hence, although Whitehead's philosophy forms the general background for discussion, and his theories of individuation and of vague futurity commend themselves for acceptance--showing as they do how indetermination is possible, and how it is actually experienced--in place of the theory of appetite, the theory of tension will be presented and illustrated. It will be shown by this that futurity, as immediate tension, is part of present experience, since it presents what Santayana calls the 'tension of the event.' Logically tension is based on polarity, and would require in its complete analysis a full blown theory of polarity. For the only work that has been done in that direction so far worthy of note one must turn to Hegel, whose polar logic is discussed in the next chapter. In terms of appetite, however, the polar nature of tension is clear enough: there are two chief

'roots' to the principle of polarity, the polarity of direction, and the polarity of opposition. The polarity of direction underlies the phenomenological character of time, whereby the future is the direction toward, the past the direction from. But it is the polarity of opposition that seems to collapse the future into the present, as it were, and so reveal the essentiality of the future for present experience. In terms of Whitehead's analysis this corresponds approximately to the function of the polarity of direction (which he tends to identify with direction toward mentality), as it serves as a ground for opposition, or the exclusion of entities into mere 'otherness.' Such, for example, would be the experience of effort and resistance, in which effort is quite definitely directed futureward. It must be remembered then, when the organism is discussed in terms of its 'tendency toward equilibrium,' that this is also an organismic polarity, a polarity of direction, which bears with it a polarity of opposition.

Chapter II

The Notion of Tension

In physics, in logic, and in psychology the concept of tension has broadly analogous meanings. The reason for this is to be found in its derivation from the philosophy of Aristotle by way of Leibniz. Aristotle, and Leibniz after him, found the content of metaphysics in the fusion of natural science, logic, and psychology. The Aristotelian idea of entelechy, which is the germ of the idea of tension, combined in itself three important aspects. It meant the latent activity or tendency toward action in physical nature, the logical tendency of a term to be and to become itself, and the urgency or psychic pressure which accompanies directed human experience. Each of these meanings has come into the notion of tension, largely because of the conceptual vigor of Leibniz. Their interrelations are worth the most careful attention.

Physics uses the word tension to describe various phenomena which have in common the fact that they sustain a state of potential energy. For example, the readiness of an electrical charge to release itself is called its tension, or potential. The force with which an elastic body tends to contract when stretched is also called its state of tension. In either case, the basic notion is that certain equilibriums have been disturbed, and tend to restore themselves. The case of electricity is especially interesting since there the synonym for tension is potential. Aristotle had already spoken of the potentiality of anything as its germinal tendency toward actualization. Obviously the language of physics is borrowed from philosophy at this point as at some others.

When we ask what potential energy is, the physicist replies in terms of systems and situations. "In an ordinary mechanical system," says Prof. Bridgman, "the potential energy simply measures the work done by the applied forces in being displaced from the initial to the final positions; that is, the potential energy is a measure of the deviation from the initial position, and so measures a certain feature of the history of the system." And in general, "we may look for something analogous to the potential energy which shall measure the displacement of the sys-

tem from its initial configuration."¹ One might say that potential energy is thus an expression of the genius of the physical system, or of its dynamic tendency to be and become itself. It is this character which led Whitehead to the conception of 'appetition' as the analogous genius of the monadic organism. As a measure of 'deviation from the initial position' potential energy is not a stuff or substance, but an index of equilibration. For the working physicist it is no doubt conceived in terms of mathematical functions and operations of measurement. And in this sense it is 'historical' or definitely retrospective. But from the standpoint of the state of potential energy itself, the tension is prospective, indicating what the system is going to become.

It would not do to press the analogy between the physical system and the organismic system too far, if for no other reason than that the physical concept has abstract meanings which need not merge over into pictorial representations. Yet it must be remembered that after all, the concepts of physics are derived from concrete situations. The concept of tension arises in the experience of process. As for the imaginative content, it is quite probable that the physical tension is conceived as a tendency. This would be in line with the Aristotelian tradition.

We may turn to Hegel for the most explicit attempt at the logical statement of tension. Hegel was concerned with the movement of consciousness, as well as the intersection of concepts. He carried over the polarity expressed in the Fichtean self and not-self into the process of consciousness. The life of feeling and reflection is a life of contradictions which are overcome but to give rise to new ones. The reflective paradox in consciousness is the being of the self at any instant of what it will be found to be later, but cannot be experienced as now.² The self is itself by being other than itself. In fact, anything is what it is by being what it is not: there is an essential contradiction in everything but the Absolute. In logic this state of affairs culminates in the peculiar nature of the disjunctive syllogism, in which there is a united opposition between the exclusive grounds, and an oscillation between the consequences. The concept which Hegel derives, toward the end of the dialectic process,

1. P. W. Bridgman, The Logic of Modern Physics, p. 115. (New York: MacMillan, 1928.)

2. Josiah Royce, The Spirit of Modern Philosophy, p. 206 (New York: Houghton, Mifflin and Company, ed. 1920).

to describe logical tension is that of Chemism.¹ Chemism is the antithesis of Mechanism, where the rule is mechanical determination. Out of mechanism, by its own self transcendence, comes its negation, in which there is a partial indetermination by grounds, and a partial determination by self as well as other. The synthesis of Chemism and Mechanism turns out to be Teleology, which is the last moment of the Absolute Notion before it becomes the Absolute Idea. In ordinary language, it is the concept which gives an intermediary between the concept of organism and the concept of spirit, just as chemism gives an intermediary between the concept of mechanism and the concept of organism.

The chemical object, and here "chemical" is a strictly Hegelian term, has in itself a tension between its two extremes, which are the exclusions it has been born of in transcending the sheer atomicity of the mechanical. It is seeking equilibrium, on a basis of what Hegel calls the Negative Object, or indifference. And the tension so established initiates the process of its passing out of itself into the life of final causation. By way of comment it is noteworthy that Hegel does not identify tension and potentiality; he has already accounted for potentiality in the first book. But again and again, as the dialectic spirals upward, we pass moments of disjunction which are thoroughly tensional in character. This should not be surprising, since the dialectic itself is supposed to be the expression of the equilibration of disjoined concepts. One might, it seems, substitute "equilibrium" for "synthesis" and do no great harm to the process. The essential thing is the weaving together of oppositions, the presence of otherness in the same. The instability in any phase which directs it on to the next one is tension. From the language which he uses in his specific reference to tension, one might judge that Hegel had in mind the analogy of the chemical tension of an element at the moment it unites with another for precipitation.

The realistic significance of the notion of tension is recognized by McTaggart in his Commentary on Hegel's Logic.² Nowhere in the book is his criticism of the master more dramatic. He holds that the whole notion of Chemism, which is apparently an important one for Hegel, must be unconditionally rejected, and

1. G. W. F. Hegel, Science of Logic, Trans. Johnson and Struthers, p. 368. (London: Allen and Unwin, 1929.)

2. Pp. 256-7

with it, therefore, the concept of tension. For, granting that here we have a category of alternation and not an alternation of the categories, there is no way to derive it legitimately from the idea of Absolute Mechanism. Nor is there any way to get the notion of Teleology out of it. The transitions will not stand the detailed criticism which McTaggart proceeds to give them. But what if, nevertheless, the category is allowed to remain? Then the dialectic process can never attain the Absolute, but will proceed in a circle of perpetual tension and equilibrium. It does not seem to occur to McTaggart that the tensional character of the dialectic is essential, though it may be that the later realization of this accounts in part for his rejection of the Hegelian method in his own work. Also, the difficulty of reaching the Absolute by any dialectic if it cannot be reached by Hegel's, may account for McTaggart's spiritual pluralism, in which the Hegelian Absolute does not appear. Anyway, it is evident that the spiral ascension toward the Absolute is given its "upward" curve by a somewhat arbitrary selection of concepts. And despite the justly authoritative ring of McTaggart's proposal to get from Mechanism to Teleology without the use of Hegel's Chemism, it is to be noted that neither he nor anyone else has been able to do it. Whitehead, for example, finds it convenient to derive mechanism as a restriction of organism (Teleology), through the basic mediation of creativity, or cosmic tension.¹

German dynamism, whether in Hegel or elsewhere, is most heavily indebted to Leibniz, the modern author of the psychic meaning of tension. The concept is there in his system, waiting for the slow development that the history of European thought was to give it. The analogy between tensions in mind and in nature was clearer to Leibniz than that between either and the tension of logic. He spared reason the ordeal of an antinomic dialectic, limiting the psychic tensions to perception and appetition. The latter two functions he endeavored to relativize, on the ground that experience is continuous in emotion and sensation. The appetition of the monad was a function of its perceptual activity no less than its ideal form. The swarm of minute perceptions was to be conceived as a universe of infinitesimal adaptations of

1. The order of the world is derived from God, whose essential nature is creativity. But it is the order of the world which restricts organisms, and makes possible mechanical systems. The wisdom in making the chemistry divine is evident. See Process and Reality.

the psychic organism, whose dominant inclination was toward equilibrium.¹ Hence the minute perception or feeling was a component in psychic tension, a fact which Leibniz expressed by correlating unrest in the organism with the determination of its inclinations by the integral effect of these feelings. Such inclination might be viewed as continuous in kind with the inclination which is involved in the compulsion of ordinary objects upon the experient. It could be unconscious in the sense that its component feelings need not be clearly focal in perception. Yet, these marginal impressions are retained in memory, and exert their influence on the subsequent psychic process. In this role they are of the nature of perceptual appetitions, or tendencies toward clear and distinct perception. 'Leibniz' version of them as infinitesimal perceptions is not essential to the picture. Here he was following the atomic tendency of physical theory, on the one hand, and his interpretation of the continuous nature of the mathematical calculus as constituted by infinitesimals on the other. What he called minute perceptions can be viewed as serial limits in the continuity of ordinary perceptions. That was the way Kant conceived the process, in his theory of intensive sensational quanta. That also, was the way James conceived the process in his flux of consciousness. I do not believe that the change violates meaning. The important thing, however, is the way in which Leibniz brought together the seemingly diverse faculties in a connative integration. The analogy between this and the integrative tendency expressed in physical tension is revealed most clearly in terms of the equilibrative character of both functions. The psychic organism seeks to return to equilibrium, at the level of clear consciousness this becomes the urgency of desire; coupled with the initiation of activity it becomes volition. It will be noticed, however, that tension is the generic concept, volition its species. If it be asked how there can be psychic tension, or the state of psychic energy, when there is no such thing as psychic energy, the reply must be that the question has been begged. True, there is no psychic energy if by energy we mean stuff, or substance apart from systematic organization. But what Leibniz seems to have meant was the differential within a dynamic system. Such a differential is a dynamic function expressing the integration of the system. Leibniz himself did not use the term energy in any but an Aristotelian sense in this context. But in view of what he said about it,

¹. G. W. Leibniz, New Essays Concerning Human Understanding, trans. Alfred Langley; p. 171. (New York: MacMillan, 1896.)

the conclusion that he was describing what he might have called psychic tension does not seem unjust.

Among the recent psychologists who have in one way or another inherited the Leibnizian standpoint are the psycho-pathologists, Janet and Freud, the functional and configuration schools, and certain behaviorists who have been influenced by any or all of these. Reserving detailed consideration of the psychology of realization, or tension as the sense of reality until later, it will be well worth while to show what tension means by illustrating how psychologists have interpreted it.

The "complex" of Freud and his followers, to instance the usage of abnormal psychology, is a locus of emotional tension. The repression of impulse leads to a state of tension in which the functional balance of the organism is threatened or seriously disturbed. The complex is the particular ideational or imaginal content of the tensional situation. The tensions, once set up, tend to discharge themselves along the line of least resistance, which leads to the various circuitous discharges of impulse in descriptions of which the Freudian literature abounds. The therapeutic technique involves the restoration of normalcy by the re-casting of the tensional set-up, or the breaking down of the complex.

It has been suggested that tension replace the function of pleasure and pain in the phase of memory which psychologists call "stamping in."¹ The accepted view attributed the physical memory of the rat to run the maze to pleasures and pains involved in the course of the process. The assumption was that the pleasure accompanying success, as the consumption of food, and the pain accompanying failure, tended to preserve or eliminate respectively the reactions concerned. On the basis of a tensional theory there would be no need to posit pleasures and pains in the rat's learning process. The assumption would be that certain tensions are established which tend to discharge themselves when the proper situation is afforded. The tension associated with the complete carrying through of the act, say of getting food, would be re-established in a return to the situation. Repetition of the act would simply make it easier, in the sense of having less disease or disequilibrium associated with it. Introspection reveals on the part of the observer an uneasiness when a customary act is not completed, as when one passes by a corner that one is accustomed to turn. The customary discharge of tension has been balked, resulting in a disturbance of equilibrium.

1. E. J. Swift, "The Learning Process, A Criticism and a Theory," Psychological Review, vol. 36, 1929, pp. 27-43.

The concept of tension has also been introduced successfully into the solution of problems in social and political psychological theory. The socialization of the individual can be viewed as a process of learning to control tensions, and to keep the proper balance between inner and outer stresses.¹ The successful integration of the individual in society is the equilibration of the individual and of society. The tensions which the individual has to control are at first merely organic: certain urgencies must be repressed, or diverted. But at higher levels of organization the control is indirect through habit, or direct through conscious volition. The same approach in politics would mean an interpretation of political ideation and behavior in terms of the individual and group tensions. Phenomena such as group control through the manipulation of symbols, or the emergence of timely leaders and demagogues, can be understood as the tensional adjustments of dynamic social systems in which individual systems such as selves and organisms are components. The attempt is to give both a phenomenological and a genetic account of political experience.²

In philosophy the idea of tension has played an increasing part in theories of value. The reason for this is the ease with which a dynamic viewpoint has been derived from the implications of a nineteenth century philosophy. Through configuration psychology, whose contribution is important enough for especial consideration later, and particularly through the older functional psychology, the organismic or "wholistic" perspective has become fairly dominant in philosophic value theory. In a sense the debt to functional psychology is a debt to Leibniz no less than is that to the Gestalt school. For it is well known that Dewey derived his reflexological dialectic from Hegel, and that in his earlier years he was a thorough student of Leibniz. As I have already suggested, both Hegel and Leibniz surely did much to explicate the tensional categories. On the basis of his modification of the reflex-arc concept so as to relativize stimulus and response, Dewey early held that thought, i.e., the conscious process, is a tension between stimulus and response.³ Obviously this is in accord with

1. L. K. Frank, "Physiological Tensions and Social Structure," Publications of American Sociological Society, 1927, pp. 74-83.

2. H. D. Laswell, Psychopathology and Politics. (University of Chicago Press, 1931.)

3. John Dewey, "The Reflex Arc Concept in Psychology," Psychological Review, 1896.

his conception of the stimulus and response as functions of an organic circuit, or dynamic system. Mead, whose psychology more or less interpenetrates Dewey's at every point, suggested that the inner content of the organism, its here and now, was to be conceived as a content of tension, or, as he puts it, of stress and strain.¹ Among the value theorists, Prof. Parker has expressed most succinctly the general significance of tension for generic value. His notion of inner and outer harmony is based on the theory of inner and outer equilibration of tensions.² Prof. Ames has isolated the religious value basis in religious experience in terms of tension. A spirit, says Prof. Ames, is any object which functions in a focal way in a situation of high tension. Here speaking of a tension as high means, as it always does, that the disequilibrium is comparatively great, and consequently the tendency to return to equilibration is also great. The spirit, in this sense, can be either the object which establishes the tension, or the object which releases it, or both; or again, one object can serve both roles. The attribution of power to the spirit is a direct response to the tension associated with it.³ These are but two instances of many that might be cited. The concept of attitude in social psychology and the theory of meaning, the determining tendency of the Wurzburg school, the governing propensity of the American behavioristic value theorists, are all based upon the fundamental conception of tension.⁴

It might be questioned, with some justice, whether the meaning of tension is the same in all of the uses of it which have been cited. Perhaps, like the term idea, it is a highly ambiguous

1. G. H. Mead, unpublished manuscript, "Mind and Body."

2. Dewitt Parker, Human Values, see especially p. 32. (New York: Harper, 1931.)

3. E. S. Ames, The Psychology of Religious Experience, p. 106. (Boston: Houghton Mifflin and Company, 1910.)

4. See, for example, Prof. R. B. Perry's discussion of organic equilibration in his General Theory of Value. (New York: Longmans Green and Company, 1926.)

motion, whose appeal to the psychologist lies in its essential vagueness. The easiest way to answer such an objection would be to point out that the basic concepts in any science, especially a new one, are derived at some time through some striking analogy, and that their generality and consequent utility is inseparable from a certain degree of vagueness. So long as the meanings do not fall in entirely different universes of discourse, or do not have internal inconsistency, the suggestive value of the concept is not impaired. But to follow out the line of criticism in more detail, several differences in meaning are certainly evident. There is the possibility of a sharp divide between physical and mental categories, such that one might conceive either physical tension in the organism, or mental tension, or both, without finding any real relation between them. So-called physiological tension, for example, is a description of the dynamic state and process of the physiological organism. It need not essentially have anything to do with consciousness, or whatever is considered distinctly "mental." Psychic tension, on the other hand, might be simply a state of feeling, such as the introspective phase of emotion or of volition, and without any real organic significance. But one important value in the tensional approach lies just here. Whatever be the metaphysical interpretations of its various exponents, as to its physicality or mentality, the concept of tension is neither mental nor physical exclusively. It is organic, which means that it is either or both. It constitutes, in a word, the conceptual passage from the "physical" to the "mental" or in the other direction.

In a similar way we can dispose of the question as to whether we are dealing with a behavioral or a non-behavioral category. From the dynamic standpoint there is no phenomenon which is not either a behavior component or a behavior correlate. It is true that the state of psychological knowledge makes it impossible to find these components or correlates in many instances, but the point of view assumes that they are there. Nor is there any need to limit the term behavior to the gross organic or recognizably motor segments of the process. The activity of the sense organs, for example, is their behavior just as truly as is overt action the behavior of the organism as a whole. And in neither case is the process a mere flux in the naive sense. There are isolable structures, constancies of function, invariants of pattern, and recurrences of content. There are, in a word, discernible states or situational conditions, with definite functional characteristics. Tension, though fundamentally a dynamic concept, has its 'static' import, in that it represents the state of dynamic sys-

tem. If, now, that state is processional, as it is in behavior, the systematic character is there nevertheless. And the supposition that invariably it is accompanied by tendencies toward equilibration, and that these tendencies are functions of the integration and differentiation of the components involved. The further assumption, that there is in some sense a phenomenological or distinctly 'psychic' meaning involved requires further detailed discussion.

Descriptively tensions are dynamic, directional, ambiguous--they are the indices of events. They are not 'essences,' though they may be immediate; they are not primary 'data' of intuition, if by the given we mean simply the specious. Rather they are immanent directors of intuition, its limits, trends, origins. As such they are presentiments of change, novelty, and emergence, harbingers of becoming. Their psychological history is a story in itself.

Chapter IV Santayana's Dynamic 'Essences'

Nothing is so foreign to Santayana's essences as polarity, either of direction or of opposition. In the realm of essence there are no changes, no novelties, no tendencies, or polarities involving direction from and toward; and each essence being responsible only to itself, there are no contradictions or oppositions. In a sense, the absence of direction involves that of opposition, since these two determinations of polarity are inter-dependent. The polarity which is direction toward something gets its meaning partly from the fact that it is also a direction against something, namely, against whatever is going in the opposite direction. But direction against is of the very essence of the polarity of opposition, hence the interdependence of the 'two roots of the principle of polarity.' The absence of polarity from the realm of essence should entail the absence of polarity's dynamic phenomenological counterpart, the experience of direction and opposition which is found in feelings of tension. There should be no directional tensions, no oppositional tension, in Santayana's immediacy. Yet there is a point of view from which tensions in immediacy are expected, if not welcomed, simply because they seem essential to experiencing, whether as indices of events, or as involutions of the future in the present. Such a viewpoint of course, would in some way assert the immediacy and the reality of time, process, change: it would be that which Wyndham Lewis calls 'futuristic.' But Santayana has never wanted the winds of futurism to gain permanent hold on his ethereal essences.

Change is among the things that can be doubted by the adept in scepticism. For it is an inference, a positing of animal faith and specious like all of the others. Suspending animal faith "I no longer seem to live in a changing world, but an illusion of change seems to play idly before me, and to be contained in my changelessness."¹ But doubt, once admitted, becomes ground for a generalized belief that "Events, and the reality of change they involve, may therefore be always illusions."² Let the sceptic

1. George Santayana, Scepticism and Animal Faith, p. 30. (New York: Scribners, 1930.)

2. Ibid.

cast aside his animal urgencies, his fears, regrets, hopes, and desires, in a word, all that, when purified phenomenologically, becomes what we have called tensional, and the reality of change has been cast off with them.

Yet paradoxically enough, Santayana does finally admit to immediacy data that are candidly tensional. That in doing so he becomes disloyal to his essential thesis, even contradicting where he dare not assimilate, need not detract from the value of his phenomenological contribution. There is, moreover, the whole positive theory of tension worked out in The Realm of Matter, which, when purged of its cosmological pretensions, becomes definitely futuristic.

For Santayana the field of awareness is a manifold of static data, which either as qualities or as forms or both are selections from a 'realm of essence.' The particular quale 'this red, here and now' is immediate in intuition as an 'essence' no less than is the form 'triangularity.' Consequently, whatever is present to feeling or awareness, whether it be sensation or memory, impulse or meaning, is present in the immediacy of a static, discrete, universal essence. Essences are Platonic Ideas relieved of their dynamic and existential meanings, and welded with qualia in immediate experience.¹ Since they are intrinsically irrelevant to existence, both physical and mental, they are not immediate warrants for any reality save their own, and although spirit or active awareness is dependent on them for content, they are not dependent on awareness for their being. As non-existent, their reality is constituted by their inner necessity, which along with their universality, or infinite potentiality for exemplification, is reality in the mode of 'substance.'² Yet they are in some sense real both as independent of awareness and compulsive at least on themselves. They are what they are whether anyone happens to intuit them or not. One might question the seemingly contradictory characteristics that are here involved in the notion of essence: qualia and qualities seem to be confused, the former being described as essences only through

1. George Santayana, The Realm of Essence, pp. 155 ff.
(New York: Scribners, 1927.)

2. Ibid., pp. 24-25.

their borrowing of properties from the latter.¹ On the other hand, universality is used in a way that excludes generality from it, contrary to the more classical usage, because forms and qualities take on enough of the nature of qualia to forfeit generality.² The doctrine that essences are independent of their being intuited, moreover, raises the embarrassing question of whether the status of essence is empirically determined, and if so, in what manner. If their status is given, then its givenness must involve some immediate intuition of both the inner necessity of the datum and of its infinite potentiality for exemplification, not to mention a sense of its transcendence of the intuition in which it is given. There would be some sort of vagueness, or indetermination, and some sort of compulsion, neither of which essences allow. But if their reality is not given, then, whatever modality one ascribes to them, the assertion that such data are the most real, the most indubitable of beings, becomes doubtful if not even groundless. The problem is at least as old as Spinoza's idea of a God whose essence was his existence, simply by definition. Santayana's essences are thin and specious Absolutes whose perfection implies their own 'subsistence.'

These and a good many other difficulties would arise in a critique of Santayana's position. I cite them, however, not simply as vicious contradictions, realizing that they are essentially dialectic diversions. What most of Santayana's critics seem to have missed is that his method is a variety of static Hegelianism, in which contradiction is methodological. The positive final contribution then becomes an exhaustive revelation of certain fundamental aspects of experience through the poetry of intellectual mood rather than the rigor of logical deduction. The bringing to focus of immediacy and universality, of intuition and clairvoyance tends by its very distortion of experience to illuminate areas that are often overlooked. This may be true even of the major contradiction in the system, the denial and affirmation of the fact and function of tension in consciousness.

¹. Cf. on this point the criticism of 'essence' theories in Mind and the World Order, by Prof. C. I. Lewis, and in Prof. Chas. Morris's Six Theories of Mind.

². Realm of Essence, p. 36.

But with essence as the immediate datum, reality of any other description becomes the object of belief, or 'animal faith.'¹ Santayana writes with customary clarity: "...a long experience must intervene before the problem arises which I am here considering, namely, whether anything need be posited and believed in at all. And I reply that it is not inevitable, if I am willing and able to look passively on the essences that may happen to be given, but that if I consider what they are, and how they appear, I see that this appearance is an accident to them; that the principle of it is a contribution from my side, which I call intuition."² Clearly, the immediate data of awareness contain no warrant for those modes of reality which include existence and actuality. True, the categories in which Santayana often discusses the positing of reality are the cognitive ones, but by implication, and often explicitly, he refers the sense of reality, however primitive, and whatever its content, to the act of animal faith. Belief is but the definiteness of animal faith at the consciously cognitive level.

Pursuing the theoretical consequences of the 'trick of arresting the immediate,' we gradually purify immediacy of anything but the essence of the moment. In ultimate scepticism there is no more need to assume connection between essences than there is to assume the connection of any one essence with actuality. Here we have the stability, the equilibrium, that goes with the complete loss of tension. We accept our illusions for what they are, content that they make no demands upon us beyond the demands of the moment. There is something here of the paradox that one finds in Bergson's duration. Arresting the immediate is not such an easy task, but must demand some effort and feeling of tension. Yet, the stability of essence, like that of duration, bears with it the accent of eternity and ultimate balance. It is possible that if Santayana had taken into account more fully the sense of effort that accompanies the intuition of certain essences, such as the intellectual ones, he might not have identified so easily the discovery of essence in lazy revery or sensuous enjoyment with that which occurs in intellectual activity. Of course the intention of such an identification is similar to that

¹. Santayana, Realm of Essence, p. 36.

². Scepticism and Animal Faith, p. 133.

in Bergson's somewhat favorable comparison of the freedom of action with that of spiritual creation.¹ In both instances there is the endeavor to lend a glow to the commonplace, and an emotional immediacy to insight. For Santayana, either can be 'enjoyed' in the solipsism of the present moment.

But the world and experience will not be denied for long and in their return to awareness it is tension which serves to admit them. At the root of belief, and of animal faith, lies the tensional experience of shock. Says Santayana:

"But when a clap of thunder deafens me, or a flash of lightning at once dazzles and blinds me, the fact that something has happened is far more obvious to me than just what it is that has occurred; and there are perhaps shocks internal to the psyche in which the tension of the event reaches a maximum, whilst the nature of it remains so obscure that perhaps my only sense of it is a question, a gasp, or a recoil. The feeling present in such a case is, with but little further qualification, the sheer feeling of experience."²

Here be it noted that the 'thatness' and the eventuality of the datum are given even more clearly than its 'whatness' or essence. Its nature remains obscure in the overwhelming sense that it has happened, is actually there. The dynamic balance of the psychic organism is challenged to reset itself according to the tension of the event, causing feelings of surprise and recoil. Shock is a local vibration registering the emergence of new tensions and the reluctant discharge of old ones. Even the most transparent of essences, insofar as we feel that they are, must be accompanied by their 'sheer feeling of experience.' In the givenness of any 'what' there must be the giving, which constitutes its 'that.' It will be noted too that Santayana frankly discovers in the shock of experience the vagueness, compulsion, and sense of independence which are so foreign to essences themselves. Yet these are involved in the 'feeling present,' that is, an immediate intuition. Despite his dialectic use of shock to establish, by inference, the existence of the self prior to that of anything else,

¹. For Henri Bergson's discussion of tension, see Matter and Memory, pp. 237-8, trans. Paul and Palmer. (New York: Macmillan, 1911.)

². Scepticism and Animal Faith, p. 140.

our author has candidly admitted that 'the fact that something has happened....is obvious.' Hence the contradiction to which he commits himself: nothing given exists, and existence is not given; but existence is given in shock, therefore something given exists, namely, the event that is given in shock. On the latter point we are not to be left in doubt, as the following passage will show: "Experience of shock, if not utterly delusive, accordingly establishes the validity of memory and of transitive knowledge. It establishes realism."¹ That experience of shock may be delusive we are given no reason to suppose, though the paradox so stated does not escape Santayana's attention.

Santayana himself brings his antinomy to a focus in a passage remarkable for its philosophic irony:

"Nevertheless shock, like any other datum, intrinsically presents an essence only, and might be nothing more; but in that case the dogmatic suasion of it (which alone lends interest to so blank an experience) would be an illusion...Shock will not suffer me, while it lasts, to entertain any such hypothesis."²

That shock might be only an essence is a deliverance of the theory of essence, and not of an analysis of the data of awareness as such. But the theory has borne more than it can support since in it there is no place for the immediacy of event. If we cease with Santayana to revert to the extreme case of thoroughly disrupting shock, and accept the possibility of degrees of 'tension in the 'event' we have good reason to suppose that intuition is never without tensional feelings where that which is given seems real, and that shock 'lasts' indefinitely, allowing no sufferance for the hypothesis that it is merely an essence. The philosopher of essence never accepts this possibility, but even after grounding the sense of change of shock he can write:

"If change has really occurred, and not merely been imagined, shock is not only intuition of change, but trouble in a process of change enveloping that intui-

1. Scepticism and Animal Faith, p. 142.

2. Ibid., p. 140.

tion of change. I am right in positing a desultory experience in which this intuition is an incident..."¹

But the only way conceivable that change has not really occurred, and has been merely imagined, is for the 'change which I feel' to be 'merely a feeling within the unity of apperception.'² That is to say, we can give up the immediacy of events only by resort to a transcendentalism in which immediacy itself is resigned. And although Santayana does not go in the direction of transcendentalism explicitly, he sees its possibility as the possibility of trans-ultimate scepticism. Perhaps a thorough analysis of his essence theory will show, as suggested above, that it actually does imply the transcendental logic. There is probably nothing less than the sensationalist hypothesis, and its correlative transcendental unity, in the assumption of discrete and static data.³ Certainly if the transcendental logic can be used, as Kant positively used it, to ground the possibility of experience, it can be used also to ground the possibility of non-experience. In fact, Kant did make his negative use of it in his treatment of noumenal reality. That which was not encompassed with the apperceptive activity of the transcendental ego was simply not to be known.

It is evident, then, that a denial of the proposition which we have been trying to defend, i.e., that events are presented in oppositional tension, leads to self-contradiction on the part of the one who would deny it, as well as to the plausibility of the tensional view in light of its evidence.

Nor is this all, for there is the unabashed positive contribution found in the poetically cosmological Realm of Matter, where its naturalistic disguise need not hide from us a definite phenomenological import. By 'matter' Santayana means simply the flux of events; he calls this 'material' not for descriptive purposes, but merely to reassert in another form his doctrine

1. Ibid., p. 143.

2. Ibid.

3. On this point see Whitehead, op. cit., and J. H. Randall, "The Latent Idealism of a Materialist," Jour. Phil., Vol. XXVIII, No. 24, Nov. 19th, 1931. Both Whitehead and Randall discuss Santayana's sensationalism.

that events are not given as happening. They are material as opposed to the spirituality of the psyche which is privileged to see them only through the thin fine veil of essence. Again Santayana is worth quoting:

"I do not think," he writes of the experience of the flux, "that analytically transition can be otherwise expressed than as a transformation of one thing into another, involving two natural moments, and leaving the bond between them obscure."¹

If we bear in mind the fact that shock proclaims an event, which is nothing other than a terminus in change, the relation between this statement and the theory of shock will be evident. The experience of shock is also the experience of change; now the problem is the more detailed one of describing what had earlier been mentioned as the 'tension of the event.' Santayana continues:

"But it is not analytically that transition may be understood; it is lost when its terms are divided; and yet it is no synthesis of these terms, but a generation--whatever that may be--of one term out of the other. Within each term, however, we may expect to find a synthetic symbol and counterpart of transition. Let me call it the forward tension of the natural moment. This name is not meant to attribute to the elements of the flux any conscious effort or expectancy; they are restless without the feeling of unrest; yet the analogy implied in the metaphor must be a real analogy, since effort and expectancy are creatures and expressions of this very tension in the flux of matter, when it takes the form of a psyche."²

Now, from the standpoint of what happens, it might be said that shock is the experience of novelty, or of difference between the forward tensions of the event and the act of experiencing it.

1. George Santayana, The Realm of Matter, p. 91. (New York: Scribners, 1930.)

2. Ibid.

We must not think that because the compulsion of an event in awareness is direct and immediate that it is not the compulsion of the event itself. The point is that its compulsion upon awareness is the way we experience the forward tension of the event, and our own tensional resistance to it. Santayana, who makes events depend upon inference, cannot go so far in his philosophical theory; but in philosophical practice his meaning is unmistakable.

Any doubt on this score is relieved when we consider his method, which is not unlike that of Schopenhauer. Events, like men, are intuited through their dispositions. Outstanding in the life of awareness is will, and the life of events is to be conceived by analogy to is. Human action has forward tension and thus:

"We may therefore confidently attribute the forward tension proper to our life to all the rest of nature down to its primary elements, without attributing to those elements, or to that total, any specifically human quality....We may therefore appeal to our experience of action on the human scale to suggest to us the nature of action even in the heart of matter, which a mere diminution of mathematical scale or use of the microscope may never reach."¹

The analogical significance of tension, which is here narrowed to the sense of action, need not be called on in a phenomenological account. Rather, what we should say is that insofar as the 'heart of matter' seems real to us, it is somehow, perhaps in imagination, associated with its own proper realization. It would be but a short step from the cosmological aims and position suggested in the method of analogy to the grounding of the compulsive character of eventuality in immediacy, along with the surfacing essences. But the cosmologist stays by his poetry and writes of the nature of things: "Now, on the human scale the most obvious units in action are men, and their forward tension is dramatically called their will."² It would not do for

1. Ibid., pp. 91-92.

2. Ibid.

the hardy naturalist to admit that his method is the method of intensive concretion, tracking to its lair the essence of the will that he feels in himself, and seeking its essential function in awareness. So that on the one hand he justifies the attribution of something like will to nature not on the ground that we feel will there---the essence theory precludes that---but on the ground that we ourselves have emerged from nature, and on the other he finds drama in the description of our own forward tension as will, when quite obviously, there is nothing better to call it. Not a genetic, but a historical cosmology must serve for the description of a content which is barren of immediacy. Nevertheless, here we have isolated with classic precision the relation between oppositional compulsion and the sense of change.

Immediacy, then, is after all dynamic, not merely a segment or region come upon by chance in a field of placid essences. It contains tensions, pointers of the emergent, oppositions that shall challenge and confuse. The 'animal' whose 'faith' Santayana finds so intriguing is an organism recasting in new dynamic configurations the system which is its being. It is characterized by major and minor directional tensions, and by the vibrant recoils that occur in opposition. These tensions are registered in the flux of awareness--where self observation allows us to speak of this flux--as tendencies toward equilibrium, and shocks that accompany new data. One might be tempted to call such data dynamic essences, were it not that the term 'essence' is already laden with meanings of being and contemplation rather than of becoming and action. Tensions are dynamic data, best known for what they are, and perhaps best designated simply as tensions.

If one were looking for a name more poetically suggestive and at the same time as representative of becoming as the term 'essence' is of being, he might find it in the Latin word 'future,' using it where necessary in the plural. 'Futures' might then take their deserved place as fundamentals in experience as we know it. But if, when we speak of tensions, their accent of futurity is remembered, there is small danger than any romantic love of essences will cause us to neglect the ultimately dynamic nature of experience by trying to reduce time to eternity, becoming to static being. So sensitized to the eventual dimension of immediacy, we might be prepared to admit the plausibility of an 'aesthetic of events.'

Chapter V

Peirce and the Aesthetic of Events

The importance of an aesthetic of events has been recognized of late by Whitehead, but its metaphysical significance was pioneered by two earlier thinkers whose contributions to the intensive concretion of concepts can scarcely be overestimated. I refer to Immanuel Kant, the genius of the post-enlightenment, and to his methodological descendent, the more recent Chas. S. Peirce. Kant called his chapter on the intuition of space and time the "Transcendental Aesthetic," intending to emphasize his interest in the forms of intuition. The general sense in which he there uses the term 'aesthetic' is the precise sense in which it signifies the descriptive method in philosophy. Following and generalizing the insights of his master in this as in other ways, Peirce declared that phenomenology, or the science of immediacy, is but a branch of the general aesthetics. Moreover, in their concern with reality, both of these thinkers conceived the real as the actual, and grounded experience in the experience of events. A glance at their method will make clearer the reasons for such emphasis, and at the same time prepare us for a more detailed consideration of their contributions to the description definition of reality.

It was Peirce who most fully realized what Kant had tried to do and how he had tried to do it, much to the augmentation of his own philosophical stature. The attempt had been to get at the inevitable structure of experience by way of the forms of logic, viewing those forms as derived from experience, yet not genetically so. Their derivation was simply the transcendental method in its role of purifier for the trans-empirical categories. Then, on the other side, these logical forms, by analogy, by application, and by function, were to be correlated with the most general facts of experience. Hence they could serve as guides or points of metaphysical orientation, giving both stimulus and control in the more aesthetic endeavor. Their justification would lie in their empirical suggestiveness and adequacy; the rationale of experience would be found in their logical ultimacy. Just as Kant selected for his work on space the only geometry that was at hand, the Euclidean, so he selected with no important modification the only available logic, the traditional logic of Aristotle. From the latter

he selected the aspects which had been dominant in the classification of judgments, and set them up as the ultimate categories. Peirce's originality lay at this point if at no other: for the first time in the history of modern thought--if the logical unrest of Leibniz be excepted--Aristotle's power was recaptured; he made genuine discoveries in logic serve him in metaphysics, and many of those discoveries were his own. It was in one of the categories attained through his logic that he isolated the intuition of events, just as Kant had found it before him, less clearly, through the neo-Aristotelian forms. In both cases the particular category involved was the category of relation, though its meaning was not the same for both of them. The differences can be brought out in a review of their relational analyses.

From the standpoint of the modern logic used by Peirce the category of relation is much more fundamental in one way, and less so in another, than Kant seems to have made it. It is more fundamental because it cannot be reduced to the substance-attribute relation of inherence, or to any of the species to which Kant tries to reduce it. It is less fundamental because, and here some logicians would differ with Peirce, it cannot be used to arrive at totality and continuity without a particular mathematical qualification, namely that relations must be triadic. The question as to whether all relations can be reduced finally to triads is a difficult and highly technical one.¹ Kant, of course, allowed room for synthesis in at least two ways: transcendental synthesis in thought, and the triadicity or continuity implied by the sub-category of reciprocity. So that granting the latter, the question would be one of phenomenological purity, depending on whether the category of relation has a sufficient condition in dyadicity, and whether therefore Kant does not suppose an unexplicit category, such as that of continuity, throughout.

If we assume, with Peirce, that synthesis is triadic, and yet that the category of relation finds a sufficient condition in

1. The method of Russell and Whitehead in Principia Mathematica seems to assume that no relational properties demand triadicity as a necessity of condition. A similar view is implied in H. M. Sheffer's logic forms, for which see "Notational Relativity," Proceedings Sixth International Congress of Philosophy; on the other hand the work of Royce ("Types of Order and System Sigma," discussed in Prof. C. I. Lewis's Survey of Symbolic Logic) as well as Peirce's own, points toward irreducible triadic properties.

dyadicity, as most surely we should suppose that it does, it may be possible to drop away some of the transcendental superstructure in our consideration of Kant's description of reality or objectivity, and look for the feelings involved. That is, we may ignore for the moment the assumption that sensation is in the aggregate and demands transcendental synthesis. We can assume an immediacy of relations in which continuity and therefore synthesis are immanent. This is simply a device for simplifying the interpretation of Kant: with synthesis and continuity we are not primarily concerned, and mention them only in order to reveal the general background and setting of Kant's approach to actuality. What will impress us immediately is the importance of the three schematic properties, persistence, efficacy, and interaction. These, it would seem, are the properties of the object which remain if we take away the transcendental and synthetic significance of the analysis. From this standpoint the important thing about the category of substance is its implication of independent persistence. Phenomena being existential are events; differences between events are qualitative, yet there is a something which persists through the change, and this is the feeling which underlies the notion of substance. The description of such a feeling in terms of tension as given by Santayana, is well in accord with Kant's conceptual analysis. It is failure to lapse in something not 'properly transitory,' as Santayana would have it, but something which persists, even 'drags' if you will. This is what might be called passive efficacy, or sheer resistance to the corrosive effects of time.

Compulsion as a function of efficacy comes out in the second analogy. Indeed, throughout the Critique the category of dependence or causality tends to be more basic than the others. It is used by way of illustration where examples of categorical functioning are demanded; it is in one way or another made inseparable from the possibility of experience. But in the second analogy the objectivity of phenomena is grounded on their necessary determination in time; the order of events is irreversible, compulsive. It would have been but a short step from this to the more empirical grounding of causality on memory of the immediate past. What is worthy of note, however, is the derivation of the compulsive character of the object in terms of its taking place. Nothing is added to this in the notion of reciprocity--if we subtract its triadic character--beyond the recognition of mutuality of compulsion and response. In interaction the spatial rather than the temporal character of efficacy stands forth only if we ignore the temporal implications of such a relation say as that between subject and object. Here, as elsewhere, we may

assume that interaction takes time; this is the fact which may from one viewpoint lead to a causal theory of perception. The difference is, and it is of course an important one, that in spatial thereness we have no feeling of the time that is being consumed, the polarity is instantaneous, as strain or stress, but not as memory. It is on this account that the causal theory of perception seems questionable from the standpoint of experience.

What seems actual may be viewed, in Kantian terms, as whatever has the particular modality of actuality. In the subject-object relation the objectivity, if it is eventual, demands sensation, or the complete determination of the event in experience. This is the other side of the equation for which the first term is furnished by efficacy. The dualism between concept and content is broken on the one side by the causal schema and on the other by the demand for what Kant called material conditions, or sensations. The latter prevent the actual from being that "in regard to which we can, if we choose, resort to playful inventiveness." Sensation here corresponds to what we have called the shock-value of an experience, and element which is invidiously abstract and unimportant only if we also couple with the term sensation the material or discrete import which Kant was wont to assume. Kant asks the question in his note to the Refutation of Idealism, "whether we have an inner sense only, and no outer sense, but merely an outer imagination."¹ His immediate answer to this question leaves us in no doubt as to how he intends to characterize the actual:

"It is clear, however, that in order to imagine something as outer, that is, to present it to sense in intuition, we must already have an outer sense, and must thereby immediately distinguish the mere receptivity of an outer intuition from the spontaneity which characterizes every act of imagination."²

1. I. Kant, Critique of Pure Reason, p. 246. Trans. Norman Kemp Smith. (New York: MacMillan, 1929.)

2. Ibid. Italics mine.

I attach the utmost importance to the ability granted to awareness by Kant to 'immediately distinguish' what is real from what is not, and the emphasis which he places upon the freedom from compulsion, or the 'spontaneity' which accompanies data which are not actual. That there is a similar difference between recovery and logical discourse, in that the former is non-compulsive while the latter makes demands, Kant would have granted without hesitation. But that imaginary data, if they have a reality, or actuality of some sort, have a degree of some kind of compulsion, and that the compulsion of logic is continuous with that of external events in kind, though other dimensions may be involved in the former, Kant would scarcely have admitted.

The nearest he comes to bridging the divide between reason and sensation which will not allow such generalizations of his realism is in value theory. It must be remembered that after all we have been talking about phenomena, not ultimate realities. Again, this is an effect of the dualism between reason and feeling. But two phases of Kant's theory of value tend to make more general the analysis of reality which he gives in the first Critique. They are, of course, the theory of the good will as noumenal, and the theory of the aesthetic judgment as reflexive. It was perhaps these two notions which gave impetus to Schopenhauer's generalization toward a world as will and representation. The volitional aspect of awareness, which, if its generic form in tension had been recognized, might have been seen as continuous with thought and perception, was limited by Kant to the moral realization. Apparently the tensional nature of the experience of events escaped him in its general form, though as we have seen he was keenly aware of the compulsive character of eventuality, and of the independent persistence which distinguishes passive existence. What Schopenhauer saw was that from the inside this substantial character was the tensional set which he rather narrowly identified with will, while the occasions of its change through external perception were nothing other than the compelling character of eventuality. As for the aesthetic judgment it represented for Kant the balanced or equilibrated condition of the organism, reflexive because it expressed that condition rather than the determinations of logic or the flux of existence. At its best, Schopenhauer's version of the form or Platonic Idea was a description of this aesthetic or post-realizational phase of experience, representing for him the cessation of struggle and the attainment of organic poise. Quite possibly it was some glimmering of the relation between realization in general and moral realization in particular that led Kant to identify

the sense of ultimate reality with conscience and moral experience. Also, his theory of value suggests that he did conceive the aesthetic phase to be in some sense the final or consummatory phase of process. Instead, however, of giving to the tensional factor in experience its basic status, he tended to limit it to the post-critical data of understanding, with the disturbing result that the existence of the world is finally conceivable only as a foil for the good will, yet the good will as made ontologically independent in God is so epiphenomenal that it is only a postulate.

By the time Peirce took over and recast Kant's logico-intuitive method enough had been done with the categories to show that they were inadequate as Kant had accepted them, and that even when adequate they could never by themselves give a theory of objectification. The pretended 'deduction' of the categories from themselves as necessary conditions for experience was nothing more at bottom than an assertion of belief in their adequacy and this was precisely what time had called in question. It was evident that from the empirical standpoint the categories must, all the way through, be considered either as generalizations of the modes of experiential determination, or as 'analogies of experience.' More they could not claim. But since meanwhile the role of analogy in generalization had come to be recognized, both in mathematics and in the empirical sciences, the two alternatives tended to reduce to one. The method of descriptive generalization at bottom, is the method of analogy, a fact which in itself makes dubious the breach which Kant left between reason and feeling. For analogies have the peculiarity that they appeal to both; as descriptions they appeal to feeling, and as generalizations to reason. On this account, if not others, Peirce seems to have felt the chief role of the categories is that of suggestive explanation.

He characterized the sense of actuality from this standpoint with remarkable detail, deriving it from his profound 'Cenopythagorean' categories, particularly from the category which he called 'Secondness.' The three categories 'Firstness,' 'Secondness' and 'Thirdness' are general descriptive notions whose traditional approximations are Quality, Relation, and Mediation, respectively. Firstness is sheer feeling, simple and absolute. It is the monadic property whereby anything is simply itself, without reference to anything else whatsoever. An instance of Firstness would be the complete absorption of consciousness in the color blue, or in the tone middle C. Ontologically Firstness is mere possibility, insofar as this is conceivable. Secondness, the

category in which we shall be especially interested, is the category of opposition, interaction, reference to another (hence otherness), factuality, and the indexical nature of reality. An instance would be the sheer feeling of hitting or being hit by something. Thirdness or mediation involves continuity, hence not only reference to another, but reference to a third, which is the standpoint, interpretant, or thought. It is this category which gives mentality to nature and naturalizes mind. We shall have as little to do with it as possible in the hope that the sense of actuality can be characterized without the host of intricacies which Thirdness brings in its train. Certainly, to the unbiased observer, the task of mentalizing nature and naturalizing mind is a formidable one, which would require a dissertation all of its own, even if that would be quite enough for it. Fortunately, the sense of reality does not seem to demand Thirdness.

Phenomenology was one of Peirce's constant concerns; phaneroscopy, he quaintly called it, or the science of what appears or is present to the mind. Here one seeks the feeling, and hence the Firstness, of each of the categories, be it of Firstness itself, of Secondness, or of Thirdness. The categories are relative, in the sense that any one of them applies in some way to the others. Any phenomenon involves all of them to some extent, though one or more of them may be dominant. For example, in phenomenology all of the categories are approached in terms of feeling quality, in logic all of them are approached through meaning, and so on. Wound up in these conceptions and their interrelations lies one of the most elaborate and suggestive systems of philosophy that has appeared since Kant. Our own mention of this system, aside from its method, will be restricted to those aspects of it which seem to justify the comparative isolation and description of the phenomenological correlate of Secondness, or the sense of actuality. That is, though on the one hand the relativity of the categories precludes the consideration of one of them without the others, as of feeling without relation, and relation without continuity, continuity without feeling, and so on, for special purposes that same relativity permits of the shifting of emphasis to one place or another. So long as in the process there is no pretense of a complete system of reality--and we make no such pretense, being content to characterize reality itself--there should be no danger in selection of one category more than another for consideration. If, for example, one were treating of the theory of sensation, and Peirce's contribution thereto, he would most naturally tend to emphasize Firstness, or feeling; if of the symbol, then Thirdness, mind, and meaning. Likewise, the sense

of reality demands a treatment in the way indicated by Secondness.

Of the relativity of his categories Peirce says at one point:

"But now I wish to call your attention to the kind of distinction which affects Firstness more than it does Secondness, and Secondness more than it does Thirdness. This distinction arises from the circumstance that where you have a triplet you have three pairs; and where you have a pair you have two units.¹ Thus, Secondness is an essential part of Thirdness, though not of Firstness, and Firstness is an essential element of both Secondness and Thirdness. Hence there is such a thing as the Firstness of Secondness and such a thing as the Firstness of Thirdness; and there is such a thing as the Secondness of Thirdness. But there is no Secondness of pure Firstness and no Thirdness of pure Firstness or Secondness."²

This means, to render it in more conventional language, that one can seek the feeling and definition (possibility) of feeling, of interaction or relational character of meaning; but you cannot rationally look for the meaning or mediatory character of either interaction or feeling, and cannot look for the interactional character of pure feeling. It is stipulated, however, that these restrictions presuppose that the categoreal contents are 'pure.' Of course contents are never found in such purity in experience. Now one might ask whether this is because of the nature of experience, that it somehow overflows the categories, or whether it is due simply to analytic weakness of most human minds. If, for example, we are constructing a theory of emotion, we do seem

1. The reference to number indicates the mathematical derivation of the categories. Peirce attributes them to his work in symbolic logic.

². C. S. Peirce, Collected Papers, Vol. I: Principles of Philosophy, paragraph 530. Editors C. S. Hartshorne and Paul Weiss. (Cambridge, Mass: Harvard University Press, 1931.) Subsequent references in this discussion are by paragraphs unless otherwise indicated.

to look for and find a 'Thirdness of Firstness,' i.e., a meaning and mediatory aspect of feeling. What I am interested in is the isolation of Secondness, so far as it involves what I have called the oppositional tension. If, now, the Secondness of feeling is proscribed by the statement that there is no Secondness of Firstness, i.e., pure Firstness, feeling would have to be left out of account, even account by implication. But surely there is an objectivity or otherness of feeling, such as that required by some important phases of art or social intercourse, which, though it may not be pure in Peirce's sense (he would no doubt call it a 'degenerate case'), is pure enough from some points of view, and especially from the standpoint of reality as such.

Another way to indicate the same possibility is this, that the categories as stated may be a cross-division of one sort which intersects another of equal importance for some, though not for many, purposes. Peirce himself seems to have thought of this possibility of 'mixed concepts.' Of these he says:

"Thus we have a division of seconds into those whose very being, or Firstness, it is to be seconds, and those whose Secondness is only an accretion. This distinction springs out of the essential elements of Secondness. For Secondness involves Firstness. The concepts of the two kinds of Secondness are mixed concepts composed of Secondness and Firstness. One is the second whose very Firstness is Secondness. The other is a second whose Secondness is second to a Firstness. The idea of mingling Firstness and Secondness in this particular way is an idea distinct from the ideas of Firstness and Secondness that it combines. It appears to be a conception of an entirely different series of categories."¹

This passage seems to indicate that Peirce was not sure whether, instead of demanding complete purity for his own categories, it would not be better to recognize that sooner or later their adequacy must be called in question, with the consequent search for an 'entirely different series.' Such a search, for example, is to be found in the work of our great contemporary Whitehead,

¹. Ibid., par. 528. Italics mine.

whose elaborate categoreal set, though it makes no claim to such elegance as one finds in the Peircean triad, seems to have dimensions that Peirce conceived but vaguely. At any rate, the fact that Peirce did clearly distinguish and deal with the particular aspect of his system that he called Secondness is indication enough that further analysis along the same lines can be made, whatever its fruitfulness and generality.

The Secondness of Thirdness, or the reality of meaning, need not lead to difficulties of this methodological sort, since Thirdness includes or involves Secondness by definition.

"When you contrast the blind compulsion of an event of reaction considered as something which happens and which of its nature can never happen again, since you cannot cross the same river twice, when, I say, you contrast this compulsion with the logical necessitation of a meaning considered as something that has no being at all except so far as it actually gets embodied in an event of thought, and you regard this logical necessitation as a sort of actual compulsion, since the meaning must be actually embodied, what you are thinking of is a Secondness involved in Thirdness."¹

This, in its application of the general category to aspects of the reality of ideas which might easily be overlooked, is also an illustration of the power of the phenomenological method which Peirce discovered. The finding of continuity between events and thoughts, through the concrete compulsive character of the latter, is evidence of a type of thinking which in Kant was scarcely more than germinal. Where the earlier rationalist tradition had tried to assimilate eventuality to the principle of sufficient reason by making the latter a theory of natural cause, or the empiricist had eliminated the principle of sufficient reason because he could not find in the flux, thereby calling into question the reality of ideas, Peirce can, by a scrupulous application of his analogistic categories, keep the concrete in reason without reducing it to blind compulsion. Also, and this I am not so sure he would have admitted, he can find something of the rational in eventuality, to the extent that compulsion among events is the concrete expression of law.

1. Ibid., par. 530.

In addition to the sheer feeling of a particular quality, and the consciousness of meaning involved in symbolic reference, there is a type of awareness which is relational or dyadic in its very essence. It is original in that it cannot be reduced to simple monadic or absolute feelings; it is important because it underlies the sense of actuality. Actuality ascribed to an event means that it takes place, that it is then and there, that it has relations to other existents. Hence the sense of actuality not only demands a relation between subject and object in which the latter must be 'other,' but relations of suffering and doing, of action and reaction, between objects there in the field.

"A court may issue injunctions and judgments against me and I care not a snap of my finger for them. I may think them idle vapor. But when I feel the sheriff's hand on my shoulder, I shall begin to have a sense of actuality. Actuality is something brute. There is no reason in it. I instance putting your shoulder against the door and trying to force it open against an unseen, silent, and unknown resistance, which seems to me to come tolerably near to a pure sense of actuality. On the whole, I think we have here a mode of being of one thing which consists in how a second object is. I call that Secondness."¹

The sense of effort and resistance is a direct deliverance of the phaneron, which is all that is present to the mind. It is immediate, not demanding the constructions of transcendental epistimology for its support.

The logical aspect of this analysis lies in the fact that in the simplest conceivable relation, there must be two terms; the relation is a function of both of them, and either term is what it is not considered by itself, but with relation to the other. This is what Prof. Morris Cohen has isolated as the essence of the concept of polarity. Polarity, he says, is related otherness, the fundamental notion which was at the back of Hegel's mind in the development of the logic.² Peirce's point is that any re-

1. Ibid., par. 24.

2. M. R. Cohen, Reason and Nature, pp. 146 ff. (New York: Harcourt, Brace and Company, 1931.)

lation involves otherness, and that consequently otherness, relation, and actuality cannot be conceived or experienced apart. In the sense of actuality the logical demand holds good empirically:

"Effort supposes resistance. Where there is no effort there is no resistance, where there is no resistance there is no effort, either in this world or any of the worlds of possibility. It follows that an effort is not a feeling or anything priman or protoidal. There are feelings connected with it: they are the sum of consciousness during the effort. But it is conceivable that a man should have it in his power directly to summon up all those feelings, or any feelings. He could not, in any world, be endowed with the power of summoning up an effort to which there did not happen to be a resistance all ready to exist. For it is an absurdity to suppose that a man could directly will to oppose that very will."¹

Effort cannot be reduced to a simple feeling or aggregate of such feelings, on a par with experience of simple unit qualities. In a definite sense, although it is felt, it goes beyond feeling, and it is this going beyond which gives the sense of reality as a "resistance all ready to exist." The sense of effort is a feeling, but it is not merely a feeling of a feeling; it is a feeling of interaction.

From the above description one might be led to believe that Peirce means to refer the sense of actuality to mere kin-aesthesia. The sense of effort and struggle involved in such an instance as pushing against a door would certainly seem statable in terms of muscular and organic sensation. The question is, however, whether that is the generic way of stating such an experience or whether it is a specific type of instance presupposing a much more general concept. That the latter is the case with Peirce is shown both in the application of Secondness to the compulsion of ideas, as indicated above, and in its implications for perception and for self-consciousness. The same 'dual consciousness' is involved in perception, where we expect one thing, and are compelled to accept something else.

¹. Collected Papers, Vol. I, par. 320

The tension which accompanies expectation is not discharged, but recoils in the change of its rate, direction, or intensity, and we say that experience or perception 'outruns expectations.' As for self-consciousness, one is reminded of Kant's Refutation of Idealism, and of its development in the objective idealism of the Romanticists, by Peirce's statement that "We become aware of ourselves in becoming aware of the not-self." The great difference is that for the Romanticist the self posited the not-self, while for Peirce the resistance and effort are simultaneous. Herein lies Peirce's positive realism.

The logic here is reminiscent of that of Schopenhauer. There are two phases in duality, doing and suffering, action and patience. Perception involves the consciousness of being acted upon, while volition, as the positive tension of self, involves the sense of acting upon another.

"The waking state is a consciousness of reaction; and as the consciousness itself is two-sided, so it has also two varieties; namely, action, where our modification of other things is more prominent than their reaction on us, and perception, where their effect on us is overwhelmingly greater than our effect on them. And this notion, of being as other things make us, is such a prominent part of our life that we conceive other things also to exist by virtue of their reactions against one another."¹

Two slight modifications seem necessary in this description. The first would recognize the fact that it is in volition that we have the sense of modifying other things more than they do us. If this sense is restricted to action as such, it leaves out of account the possibility of positive reaction on the part of those things upon which we act, and thus the empirical fact that quite often they do modify us, and our very actions, more than we do them. But in volition the consciousness of acting upon other things predominates, even though the state of affairs is such that their actions upon us are more important. The other modification has to do with the word "conceive" in the proposition "we conceive other things also to exist by virtue of their reactions against

¹. Ibid., par. 324.

one another." If, instead of it being said that we conceive things to exist because of their interactions, it is held that we experience them for that reason, a positive account of the experience of plurality in existence can be given. But the finding of dual consciousness in perception, as well as in volition, gives ground for a generalization beyond mere kin-aesthesia, toward a type of awareness which is original and generic.

One is reminded of Santayana's version of shock by Peirce's characterization of the dual consciousness, or what he chose to call the polar sense.¹ He realized that the traditional division of mind into affective, volitional, and cognitive functions would not bear phenomenological analysis. Perception, for instance, which is usually included under cognition, has fundamental aspects much like those of affection. It is to a great extent feeling, or firstness. More important for the problem in hand, it also has in it characteristics much nearer to the nature of volition than the older trichotomy admitted. And cognition, through the conative and teleological aspects of meaning, involves both feeling and volition in ways which the more Kantian division did not seem to suspect. But the polar sense enters perception as its volitional aspect, furnishes the very essence of will itself, and lends realism to cognition. Peirce's illustration of this sense can scarcely be bettered.

"There is an intense reality about this kind of experience, a sharp sundering of subject and object. While I am seated calmly in the dark, the lights are suddenly turned on, and at that instant I am conscious not of a process of change, but yet of something more than can be contained in an instant. I have a sense of a saltus, of there being two sides to that instant. A consciousness of polarity would be a tolerably good phrase to describe what occurs. For will, then, as one of the great types of consciousness, we ought to substitute the polar sense."²

The statement that there is not the experience here of a process of change is to be taken with qualifications. If by process we

1. Ibid., par. 330.

2. Ibid., par. 380. The 'polar sense' is quite obviously tensional.

mean of a series of changes, then such is not given in polarity. But as we shall see later, the experiences of change itself is involved in the polar consciousness, much as Santayana has found it to be in his notion of forward tension. The idea of something that is 'more than can be contained in an instant' yet is not genuinely a process, seems to get at the heart of what we mean by occurrence. The 'something more' is what gives the sense of transcendence by the event of the present moment. It is the 'brute' otherness seen from a different point of view.

So similar is Peirce's analysis of the aesthetic import of his relational category to Santayana's theory of shock that the latter might well have been derived from it.

"That shock which we experience when anything particularly unexpected forces itself upon our recognition," writes Peirce, "(which has a cognitive utility as being a call for explanation of the presentment), is simply the sense of the volitional inertia of expectation, which strikes a blow like a water-hammer when it is checked; and the force of this blow, if one could measure it, would be the measure of the energy of the conservative volition that gets checked. Low grades of this shock doubtless accompany all unexpected perceptions; and every perception is more or less unexpected. Its lower grades are, as I opine, not without experimental tests of the hypothesis that sense of externality, of the presence of a non-ego, which accompanies perception generally and helps to distinguish it from dreaming."¹

The notion of shock to which both Peirce and Santayana attach so much importance is worthy of further analysis.

Etymologically the word 'shock' is traceable to its root in 'shake,' meaning to jolt or jar. The shocking is in one respect the striking, and that which is struck experiences vibration. It is this flavor which permeates one of the technical meanings of 'sensation' as used by the French psychologists--who identify the 'sensational' and the frappant--and also finds currency in the idiomatic English usage of 'sensational' to stand for that which is outstanding, surprising, or even startling. Vibration is the intra-equilibrical phase of organic adjustment, ex-

¹. Ibid., par. 332.

pressive of tension away from or toward equilibrium. In its vibratory character actuality overflows expectation; it is the 'more than' in the statement already made that actuality is 'more than possibility.' If we conceive Santayana's essences as possibilities, we may say that their stable character, which gives them their aesthetic glamour, is also functional as the general form of organic expectation. There are no shocks or surprises in the realm of essence; all is prepared for in the vagueness of expectation. This is one appeal of Platonism on a par with its ideal stability, tending to soothe the contemplative spirit in its peaceful connotations. The actuality of an event is a disturber of this peace: the settled rhythm of expectation fails, the balance is upset.

It will be noticed that in referring 'otherness' to polarity as a ground for vibration we have refused to introduce the idea of negation. That is largely because of the traditional connotations of negation, and the difficulties which surround them. There is a sense, it is true, in which the indifference to wishes or hopes that characterizes the 'other' can be called the negation of something that is already there. But the notion of polarity does not presuppose the taking of one pole rather than another for origin of interaction. It is questionable how basic in experience the notion of mere negation can be, despite Hegel's foundation of his dialectic process upon it. 'Otherness' is something positive, involving at least disjunction, at most, downright opposition. There are faint glimmerings only in symbolic logic, that Hegel's oracular phrase "Negation is internal differentiation" has any precise symbolic meaning.¹ If polarity involves negation at all, it would seem to involve partial negation, a notion whose present vagueness makes it unavailable. On the whole, it has seemed best to reserve the concept of negation for the symbolic phases of experience, and in place of 'self and not-self' put simply 'self and other.' The concrete experience of 'otherness' is something which seems original enough and pervasive enough on its own account, without help from a metaphysical logic.

To say that actuality is compulsive as well as indifferent and vibrant is but to admit that events in the field of experience compel and direct awareness itself, at the same time exerting force upon one another. This was the meaning of Kant's second analogy,

1. Something of this sort is suggested by the theory of incompatibility in the logic of propositions.

and that it is the meaning of Peirce's effort-of-the-other. Compulsion expresses the remorselessness of eventual indifference, sometimes called the brutality of the actual, and the outward reference of vibration, often called the pressure of existence. But these epithets, brutal and forceful, are reactions of discourse in its more tender and fearsome moments, not honest descriptions of reality itself. The Greeks, who were friendly with nature, even peopling her with god-like images of themselves, recognized the fatal character of the event, and tried through prophecy to foretell what they could not forestall. The direction of an event, whereby it embodies the accent of its past and the intonation of its future, was the sign that it lived a life of its own, and was not only indifferent to its experient or other, but was vibrant on its own account. Attention theories of realization ignore the wisdom of the Greeks, rather pretending that reality is merely a function of interest. Yet it is events above all that compel attention, whether or not we would give it, sweeping intuition with them in the direction their vibrant actuality suggests.

It might be objected at this point that a theory of immediacy cannot use polarity in Peirce's sense, because he resorts to the subject-object relation, while reality must be transcendent. Against this objection several points are in order. In the first place, Peirce has admitted that we 'conceive' the relations between real objects as polar: these relations may be viewed as transfers or projections of our own interactive experience, much as Schopenhauer viewed them. But if polarity is considered as an immediate fact, there is no need to posit a projection or transfer, or a subject-object relation as underlying it. As Peirce suggests polarity establishes the reality of the self no less than of the object. If Peirce is not clear enough on this, we have but to recall Santayana's use of shock to establish the reality of self, and thence of the world. But the reality of the ego is its objectivity, as objective it is itself somehow immediately given. This is not to hold for an awareness of awareness in the mystic or non-Kantian sense. It is, rather, to reject the skeletal transcendental ego as an explanatory device in experience, in favor of the vague mass of feeling which gives personal identity on the one side, and the particular moments of the self as there for awareness on the other. These latter aspects of the self can and do enter into the 'dual consciousness.' Just how they do, it is beyond our present provence to consider; the theory of the self is not to be deduced from polarity and relation. But the 'effort' side of the polar sense is an aspect of the self and is also a datum in the field of awareness. Polarity can be conceived

as holding between the self and its objects, or between the objects, without prejudging what other categories apply in either relation. From the realistic point of view, or that suggested by the facts of immediate tension, the subject-object relation is not to be seen as unique.

Some implications of Secondness do not enter directly into the theory of actuality. Here these need be barely mentioned, as indications of the scope and depth of the category. Peirce extends the polar analysis into phenomenological logic as the theory of facts, as distinguished from qualities and interpretations. His intricate theory of the symbol has as one of its phases the indexical character of 'obsistent' signs, or those that refer directly to objective reality. Even the theory of probability finds one of its bases in the doubt that accompanies various degrees of objective reference. Then, Secondness enters physiology as the contractility of the cell; it enters metaphysics as blind urge and efficacy, epistemology as one ground for realism. In a word, it is brought into play wherever the system demands indexicality and polarity. Interesting and important as these functions are, they do not demand consideration in the phenomenological context with which we are concerned. They are problems of more general interest.

Finally, and what is more important for our thesis, Secondness, through the tensional character of the 'polar sense,' gives rise to the awareness of change, which for Peirce was inseparable from the very basis of experience itself. The polar sense is but an expression, in the older language of mental faculties, of the important fact and function of tension. It represents both the polarity and tension of direction, and the polarity-tension of opposition. So much is certainly justified as a conclusion from Peirce's phenomenological analysis. It is an index of the eventual character of experience. We perceive objects, says Peirce, but what we experience is more particularly an event. Tensional sets, 'inertias,' are set up in the psychic organism by the given situation, and the resistance of these 'sets' to the emergence of novel qualities, to change, is characterized by shock.¹ Here is a contrast between directional and oppositional tensions which despite its great divergence from the more recent statement of Whitehead, is really a phenomenological purification of the Whiteheadian

1. Ibid., par. 336.

analysis. In the latter, it will be remembered, the atomic organism or monad has a directional tension which Whitehead calls 'appetition.' But appetite is but one side of a two-fold principle, the other side of which is the exclusion of aspects of the 'prehended entity,' i.e., the tensional opposition to it. The direction of appetite, with its unrest and urgency comes up against a limit in the 'other.' Were it not for this contrast, this dual polar function, the act of experience would not be an act, it would not be experiencing. Herein lies the essential futurity of experience. Peirce recognizes as much in the statement that "It is more particularly to changes and contrasts of perception that we apply the word 'experience.' We experience vicissitudes, especially."¹

Here the facts are that should give pause to those who would deny the reality of time, process, change, since in denying these they are denying the very possibility of experience itself. As against the scepticism of a Santayana which inconsistently finds in shock an indubitable ground for experience, the statement of Peirce is positive, straight forward, and exhaustive. Shocks are resultants of tensional² states as modified by new and disturbing components. As such they record change, or the difference between the termini of events; what happens has at least some small duration, else it would not happen at all. The interval of opposition between its beginning and its end is the interval recorded in the experience of it as an event. Novel qualities emerge in the process, the note lowers, the lights go out. But these novel characters are data whose realization is dependent also on their being components through tensional accents in the organismic configuration. If tension expresses the loss and regaining of equilibrium in a dynamic system, it is after all this system which strives to regain that equilibrium, and though the balance may be a 'new' one, it is never entirely so, any more than it is ever entirely complete so long as the organism persists.

1. Ibid.

2

. The term tensional is mine, not Peirce's. But it seems to indicate his primary intention quite fairly.

Chapter VI

Conclusions: Further Problems and Possibilities

We have suggested that Whitehead's theory of process gives a basis not only for the mere possibility of futurity, in his theory of individuation, but for the description of futures and their establishment as necessary for experience. Descriptively, the future is vague, indefinite, potential, general, and latently novel. This is but a summary definition, an outline of the nature of the future.

Most important, however, in showing the philosophic implications of the concept of tension, is the founding of a descriptive and explanatory approach to the problem of the essential futurity of experience by a consideration of the nature of tension. Among the various meanings and analogical bases of tension is its definitely 'psychic' and organismic meaning as the tendency of the organism toward equilibration. This tendency illustrates one 'root' of the logical principle of polarity, a principle which underlies the whole phenomenology of tension. For it exemplifies the polarity of the organism, or its direction from and toward and seems inseparable from the organismic process. Yet, the other 'root' of polarity, the oppositional one, is not far to seek where there is polarity of direction. Likewise, directional tensions are functions of tensions of opposition, since going forward inevitably involves going against.

The psychological aspects of tension can be approached from the inside, as exemplified in James's description of 'tendencies' in the stream of awareness, or from the standpoint of the behavioral correlates, as posited by Dewey, Lewin, and above all by Lashley. Introspectively tension is probably original and affectively neutral. Evidence from the psychology of 'appetition,' i.e., of affectivity and volition, seems to point in that direction. Behaviorally, tension is the polarity involved in the equilibration of the organism, a polarity which goes to the very foundations of experience, and hence to the 'behavior' of the mechanisms of perceptions and adaptation.

Phenomenologically such findings are corroborated in the philosophy of George Santayana. Here we have a philosopher who begins by excluding from awareness all that is characteristically significant of tension, in favor of a field of static 'essences'

from which intuition selects its specious data. But before he can return from his pretended suspension of impulse and faith to any adequate account of experience, Santayana must re-admit to immediacy the tensions that he had previously excluded. He does this in the theory of shock, and in the theory of tension elaborated in his Realm of Matter. Before he has finished, he has acknowledged both 'roots' of the principle of polarity, the directional and the oppositional, and has admitted the essential futurity of experience by finding in shocks the oppositional indices of events, and in forward tension the directional nature of process.

But a directly positive and fairly exhaustive account is found in what might be called the 'aesthetic of events.' This is a suggestive name for the contribution of Charles Peirce, who was in philosophical method a lineal descendent of Kant. Kant, by implication, correlated his analysis of the category of relation with a recognition of the oppositional, i.e., the tensionally compulsive, and the directional, i.e., the irreversible, character of events. Peirce's 'Secondness' is that member of his remarkable categoreal triad which takes over the category of relation, finding as a sufficient condition for it dyadicity, duality, and polarity. His discovery of the fact and function of tension is to be found in his exhaustive characterization of what he called the 'polar sense.' Quite obviously he was struggling to free himself from the older psychology which had compartmentalized the mind, and had ignored the essential relativity of mental functions. But in a fashion much more exact than Santayana's later way, Peirce indicates the relation between directional and oppositional tensions between what he sometimes called 'volitional inertias' and 'shocks.' The interpretation which we have made of Santayana is justified by the anticipatory authority of Peirce. Finally, Peirce goes to the heart of the problem by insisting upon the role of tension in the experience of events in experience as such. Indeed the two tend by their very meanings to be identical. By experience here is not meant 'all of experience, and its content,' but simply 'experiencing.' But if Peirce's account can be accepted, the phenomenological discovery of the necessity with which tension, and through it, futurity, accompanies the act of experience, renders the essential futurity of experience well-nigh indubitable.

Of the unsolved problems and unexplored possibilities which remain but a few can be mentioned by way of conclusion. There are, first the background problems of individuation and the logic of polarity. Although Whitehead's theory of indivi-

duction is the best available at present, it bristles with analytic difficulties. Chief among these is the problem of negative feeling, and negative relation. There is need for a careful analysis of the phenomena of contrast and exclusion such as the exclusion that may be involved in the experience of black as the absence of color. Concomitant with this should go a theory of negative fact, relation, and judgment which is prepared to answer the questions raised by negativity in logic. Also, in addition to the positive logic of polarity, which was vaguely grasped by Hegel, there is the whole question of degrees of otherness, and its correlative problem of degrees of polarity and oppositional tension. In logic the polarity of systems demands consideration in its relation to consistency, compatibility, and relevance. Relevance itself must thoroughly differentiate itself from structural and relational irrelevance or nonsense. This would lead on the one side to an attempt to correlate the theory of meaning and the phenomenology of symbols with the theory of tension, and on the other to considerations of the nature of importance, or of relevance in the valuational sense. The relation between tension and experienced value would be one further problem from this point of view. Such would be a comparatively new approach to the modern problem of the relation between facts, or event-structures, and values.

Within the theory of tension itself there is the problem of equilibrium, requiring much more exhaustive discussion than I have been able to give it. This would seem to involve the possibility of dimensions and species of tension. If there are degrees of tension, these degrees must correspond to dimensions, for whose definition such variables as duration, complexity, intensity, seem to be likely candidates. But also, it might be possible to find fundamental species of tension, corresponding to the three basic principles of experience and thought. From this standpoint tensions might be normal, i.e., the tensions of comparative equilibrium and of growth or assimilation, polar, i.e., tensions of direction and opposition, and persistent, i.e., tensions that are somehow functions of rhythm, pattern, and order. It is true that the notion of a dynamic system involves these aspects anyway, but they must be given phenomenological precision each on its own account. Persistence, for example, would seem to involve social dimensions of process which a comparatively gross analysis does not include.

Finally, taking quite seriously the dictum of James that relations are immediately experienced, it might be possible to construct a theory of modal immediacy by viewing the basic modal-

ties--possibility, actuality, necessity--as derivative in their immediate aspects from the dynamic relations of what they modify. The assumption here would be that the dynamic relations are themselves immediate, where by dynamic relations we mean the Kantian relations of sequence, inherence, and reciprocity, or their basic relational determinants. It might on this basis become possible to describe the experience of possibility, and so forth, as well as reveal its logical analogues in the relational analyses of contemporary logic, where the logical modals are functions of the systematic properties of relations. Just as in logic and relations defined are conditions for operation, so that relational and operational statements are alternatives, it may be that in the philosophy of the act, or 'pragmatics,' the dynamic relations are conditions for action; if this is so, pragmatism might turn its attention to the refinement of its conceptual instruments and the precision of its insights by attending to the dynamic relations from an immanent point of view, i.e., in immediacy. But further, recalling the possibility of species of tension, it might be, since tension is definitely processional, that these species correspond to or are functions of the three primary modalities: normal tension as involving the immediacy of possibility, polar tension involving actuality, and persistent tension, necessity.

Whereupon, since the basis of the logic of metaphysics is inextricably bound up with the three chief modalities of being, it might be within the bounds of conception that a new descriptive approach to metaphysics could be derived. The question of the nature of metaphysics is at present a decidedly open one: metaphysics must be descriptive, comprehensive, adequate. But just what is involved in these demands as demands upon metaphysical systems is open to question. Without going in the direction of mysticism on the one hand or of logical atomism on the other, it might be possible to get a factual or 'neutral' statement of metaphysical phenomena and theory. For example, corresponding to the theory of meaning and the valuational theory of truth, there is no theory of 'ontological value.' Yet the ontological urge has been recognized by philosophers from Plato on down to our own time. One business of philosophy, as I conceive it, is to secularize, make available objectively, the flashes of insight and grounds of motivation that seem buried in the clouds of mysticism, religion, poetry. One such secret is the secret of a sense of importance in a given cultural epoch. Another is the secret of Platonism, with its so-called hypostasis of ideas. Hypostasis it may be, but that merely names a complex and important fact. It is the business of phenomenology, at least, to get at the basis of such

facts. For example, in addition to the sheer form quality and interpenetration of parts that characterized a good piece of music, there is sometimes the sense of its formal eternity: one must have heard it before, someone must be hearing it always; at least it was not merely 'created,' but seems to bear with it a warrant for its own immortality. In a word, it has a kind of 'ontological value' that will not be denied. Vague and fleeting though the feelings in this value may be, they may be finally subject to description in communicable terms, if not to explanation through the meanings of the modern conceptual matrix.

All of this is indefinite, vague, and ambiguous, no doubt exemplifying in the realm of ideas eclectic distraction and contradiction, live tensions of opposition. But it may also be suggestive, significantly potential, shot through with implications and significant tensions of direction. In a word, it may be mere nonsense, but it may also be almost prophetic.

